

CLAIMS

1. A push button assembly comprising a housing (2) with an open end thereto bounded by a flange structure (15), the housing (2) being insertable through an aperture in a panel with the flange (15) on an outer side thereof, a fixing means for fixing the housing (2) relative to the panel beneath the panel, a push button (1) movably mounted within the open end and flange structure (15), a lamp (25) mountable relative to the housing (2) for illuminating the button (1), a switch (20) mountable relative to the housing (2) for operation by movement of the button (1) via an actuating structure (5) disposed between the button (1) and the switch (20) within the housing (2), characterised in that the lamp (25) and the switch (20) are mounted within the housing (2) so that at least a major part of the lamp (25) and the switch (20) is located within the confines of the housing (2).
2. A push button assembly according to claim 1 wherein the housing (2) has a generally open square frame structure (18) comprising side wall structures (16) with the flange structure (15) mounted at one end.
3. A push button assembly according to any one of claims 1 or 2 wherein the housing (2) provides abutments for supporting the actuating structure (5).
4. A push button assembly according to any one of claims 2 or 3 wherein at least one of the side wall structure (16) is generally open to provide access to the interior of the housing (2).
5. A push button assembly according to any one of claims 2-4 wherein the frame structure (18) is shorter in axial length than the horizontal

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length of each of the side wall structures (16).

6. A push button assembly according to any one of claims 1-5 wherein the flange structure (15) has outwardly inclined side walls which taper towards the top free end of the housing (2).
- 5 7. A push button assembly according to any one of claims 1-6 wherein the flange structure (15) is opaque.
8. A push button assembly according to any one of claims 2-7 wherein the flange structure (15) comprises a downwardly projecting peripheral skirt part defining a peripheral gap between said part and the side wall structures (16).
- 10 9. A push button assembly according to claim 8 wherein the skirt part is light-transmitting.
10. A push button assembly according to claim 9 wherein the skirt part provides an illuminable boundary to give the effect of a "halo" around the button (1).
- 15 11. A push button assembly according to claim 10 wherein the illuminable boundary is illuminable by an illumination means disposed in said gap.
12. A push button assembly according to claim 11 wherein the illumination means is preferably in the form of multiple LEDs on a printed circuit board.
- 20 13. A push button assembly according to claim 12 wherein the LEDs are independently operable from said lamp (25) and/or each other.
14. A push button assembly according to any one of claims 1-13 wherein the housing (2) provides electrostatic protection to any circuitry within said housing (2).
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15. A push button assembly according to claim 14 wherein the protection comprises "grounding members" integrated into said housing (2) to discharge any introduced electrical charges.
- 5 16. A push button assembly according to claim 15 wherein the "grounding members" comprise carbon conductive structures.
17. A push button assembly according to any one of claims 1-16 wherein the fixing means comprises one or more clips (17) on one or more of said side wall structures (16) engageable with holes in said panel.
- 10 18. A push button assembly according to any one of claims 1-17 wherein the switch actuating structure (5) comprises a generally square frame with a centrally disposed aperture (10) and two elongate legs (13) with outwardly turned feet (14) projecting from the centre of opposed bottom wall edges at rights angles thereto.
- 15 19. A push button assembly according to claim 18 wherein the bottom wall has spring members fixed across said frame to provide relative movement of the button (1) within the flange structure (15).
- 20 20. A push button assembly according to claim 19 wherein the spring members provide downwardly projecting push rods (12) for projection through apertures in said bottom wall so as to be displaceable within the button (1).
21. A push button assembly according to any one of claims 1-20 wherein the switch (20) comprises a rectangular body (19) with an upwardly projecting actuator and connection terminals (21).
- 25 22. A push button assembly according to claim 21 wherein the body (19) overlies the inner side wall structures (16) within the confines of the

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housing (2) and the terminals (21) projecting out of said housing (2).

23. A push button assembly according to any one of claims 1-22 wherein the switch (20) is a microswitch.
24. A push button assembly according to any one of claims 1-23 wherein  
5 the lamp (25) is disposed in the centre of the housing (2) mounted on a rectangular strip (22) with connector terminals (24).
25. A push button assembly according to any one of claims 1-24 wherein the lamp (25) is an LED or multiple LEDs.
26. A push button assembly according to any one of claims 1-24 wherein  
10 an LCD panel is provided between said lamp (25) and said button (1) to allow control of the light.
27. A push button assembly according to claim 26 wherein colour filters are applied to the panel to allow different colours and effects.
28. A push button assembly according to any one of claims 1-23 wherein  
15 the lamp (25) comprises an OLED.
29. A push button assembly according to any one of claims 21-27 wherein the lamp strip (22) and/or switch body (19) are separate components.
30. A push button assembly according to any one of claims 1-29 wherein the lamp (25) and/or the switch (20) are removably mounted within the  
20 housing (2).
31. A push button assembly according to any one of claims 21-30 wherein the strip (22) and/or the body (19) are completely within the confines of the housing (2).
32. A push button assembly according to any one of claims 1-31 wherein  
25 the body (19) and/or strip (22) snaps onto a part of the housing (2) and

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is held in place by pegs passing through the body (19) and the strip (22).

- 5      33.    A push button assembly according to any one of claims 1-32 wherein the lamp (25) and switch (20) are connected to appropriate operating circuitry of an amusement or gaming machine.
34.    An entertainment machine incorporating a push button assembly as described in any one of claims 1-33.